

NAVAL TECHNICAL TRAINING COMMAND

STUDENTS GUIDE

for

AN/ARC-51, 51AX, 51B RT-793/ASQ AND RT-1010/ASQ-140
COMMUNICATIONS SYSTEMS INTERMEDIATE MAINTENANCE COURSE

C-102-3014

SECTION I (INFORMATION SHEETS)

SECTION IV (DIAGRAMS)



NOT AUTHORIZED FOR
USE IN MAINTENANCE
WORK CENTERS

CNTT N2041D (9-84)

NAVAL AIR MAINTENANCE TRAINING GROUP
FOR TRAINING PURPOSES ONLY

NOT AUTHORIZED FOR USE IN MAINTENANCE WORK CENTERS

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Section IV (Diagrams)

CNTT N 2041D

SEPTEMBER

(FOR TRAINING

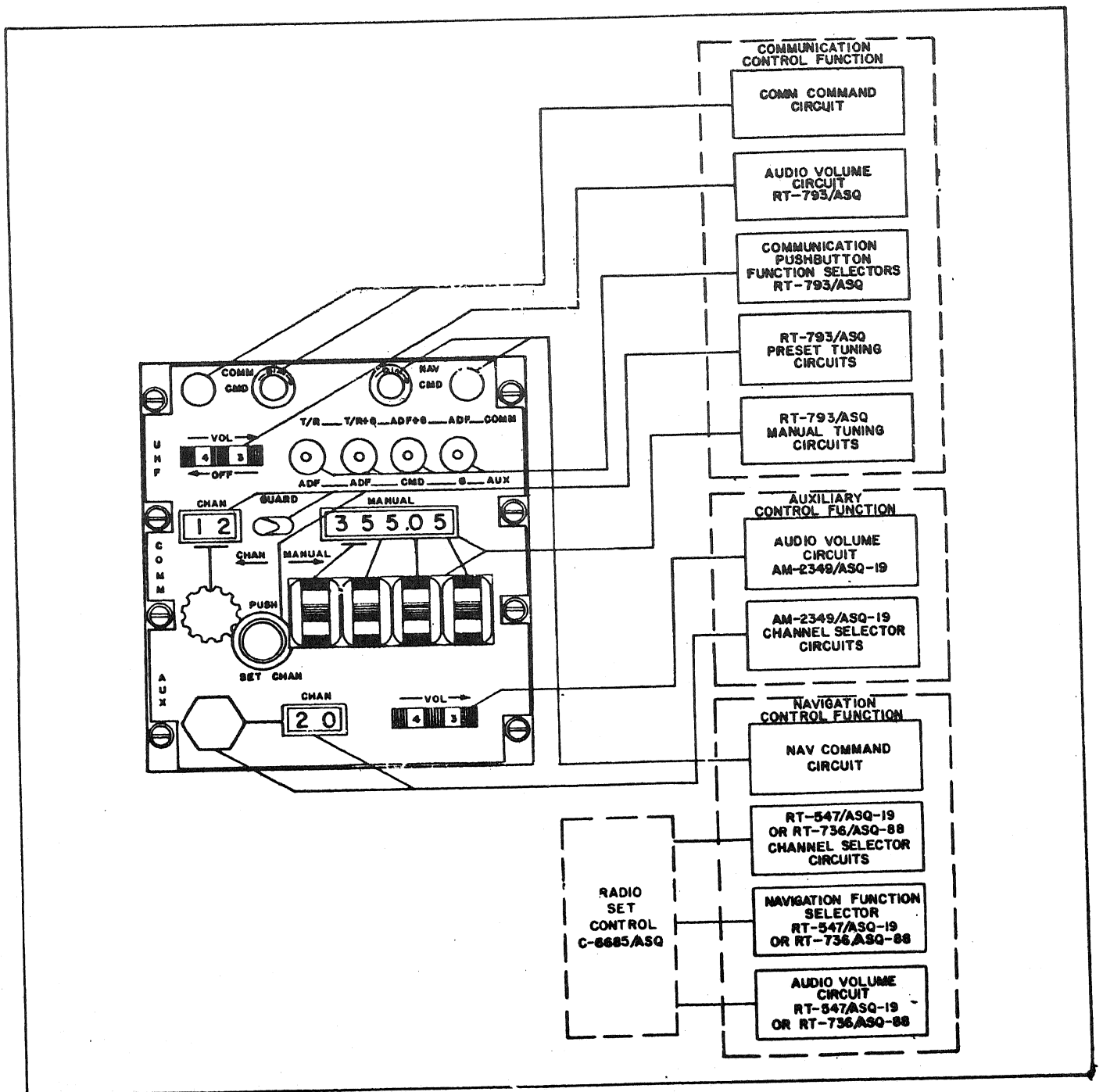
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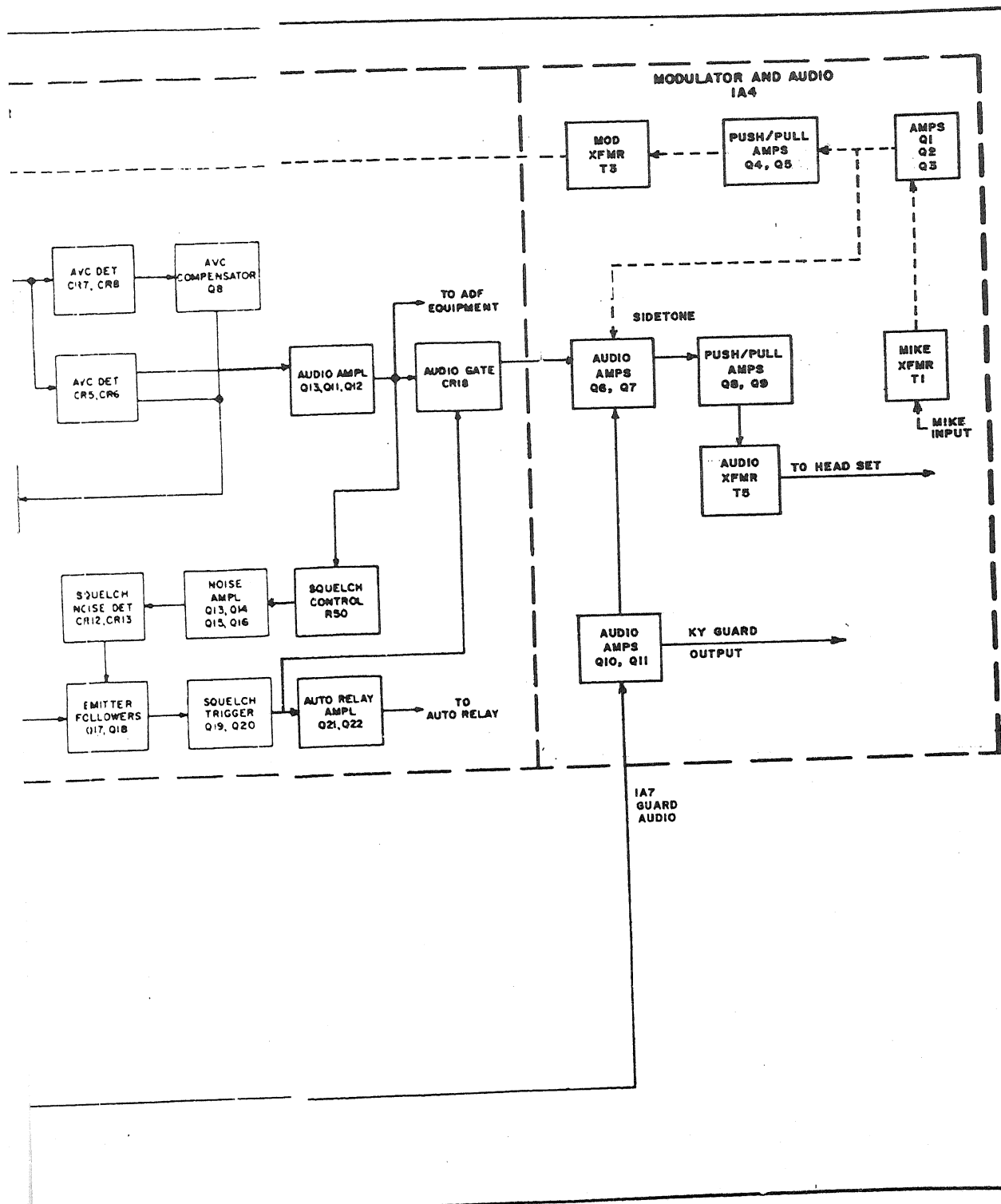
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INJECTION FREQUENCIES

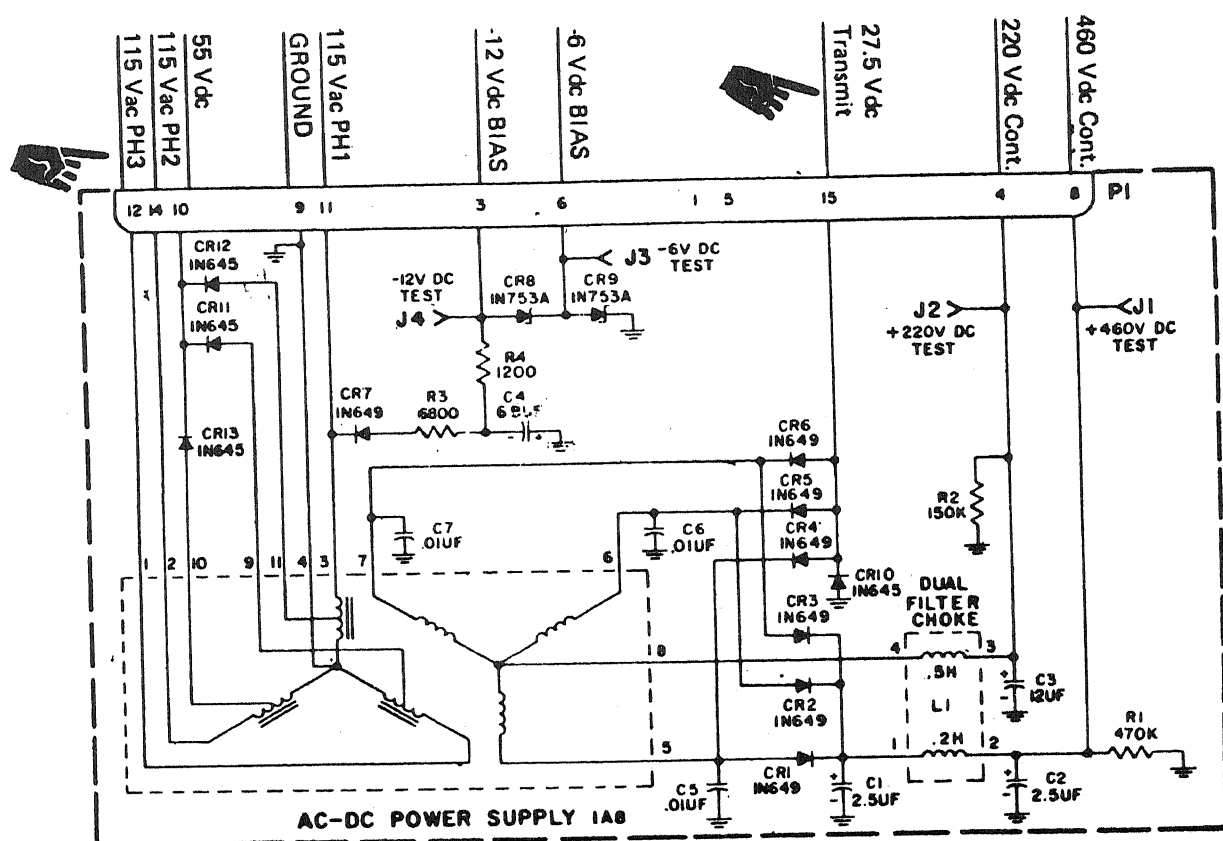
SPECTRUM GENERATOR		FIRST AND SECOND IF. AMPLIFIER				
CHANNEL FREQUENCY (22X.XX to 39X.XX-mc)	INJECTION FREQUENCY	CHANNEL FREQUENCY (XX0.XX to XX9.XX mc)	INJECTION FREQUENCY HFO	CHANNEL FREQUENCY (XXX.00 to XXX.95 mc)	TRANSMIT INJECTION FREQUENCY LFO	RECEIVE INJECTION FREQUENCY LFO
22X.XX	200	XX0.XX	17.1 (Y11)	XXX.00	2.90 (Y1)	3.40 with 500-kc if.
23X.XX	210	XX1.XX	18.1 (Y12)	XXX.05	2.95 (Y21)	3.45 with 500-kc if.
24X.XX	220	XX2.XX	19.1 (Y13)	XXX.10	3.00 (Y2)	3.50 with 500-kc if.
25X.XX	230	XX3.XX	20.1 (Y14)	XXX.15	3.05 (Y22)	3.55 with 500-kc if.
26X.XX	240	XX4.XX	21.1 (Y15)	XXX.20	3.10 (Y3)	3.60 with 500-kc if.
27X.XX	250	XX5.XX	22.1 (Y16)	XXX.25	3.15 (Y23)	3.65 with 500-kc if.
28X.XX	260	XX6.XX	23.1 (Y17)	XXX.30	3.20 (Y4)	3.70 with 500-kc if.
29X.XX	270	XX7.XX	24.1 (Y18)	XXX.35	3.25 (Y24)	3.75 with 500-kc if.
30X.XX	280	XX8.XX	25.1 (Y19)	XXX.40	3.30 (Y5)	3.80 with 500-kc if.
31X.XX	290	XX9.XX	26.1 (Y20)	XXX.45	3.35 (Y25)	3.85 with 500-kc if.
32X.XX	300			XXX.50	3.40 (Y6)	2.90 with 500-kc if.
33X.XX	310			XXX.55	3.45 (Y26)	2.95 with 500-kc if.
34X.XX	320			XXX.60	3.50 (Y7)	
35X.XX	330			XXX.65		
36X.XX	340					
37X.XX	350					
38X.XX	360					
39X.XX	370			XXX.85	3.75 (Y29)	3.25 with 500-kc if.
				XXX.90	3.80 (Y10)	3.30 with 500-kc if.
				XXX.95	3.85 (Y30)	3.35 with 500-kc if.

C-6684/ASQ RADIO SET CONTROL





RT-743/ARC-51A, Block Diagram



NOTE:
UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS.
ALL CAPACITANCE VALUES ARE IN MICROMICROFARADS.

AC/DC Power Supply



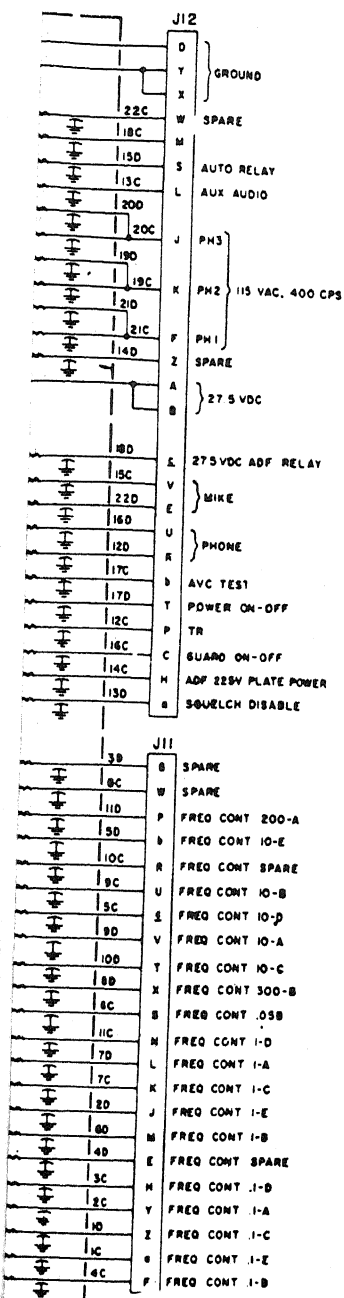
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NOTES:

- 1 UNLESS OTHERWISE INDICATED ALL RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN PICOFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
- 2 REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
- 3 CAPACITOR IS BUILT INTO TUNING SHAFT (340UUF).
- 4 CATHODE AND FILAMENT ARE CONNECTED.
- 5 CONNECTIONS FOR AUDIO OUTPUT IMPEDANCE AND BANDWIDTH REMOVE ALL OTHER JUMPERS.

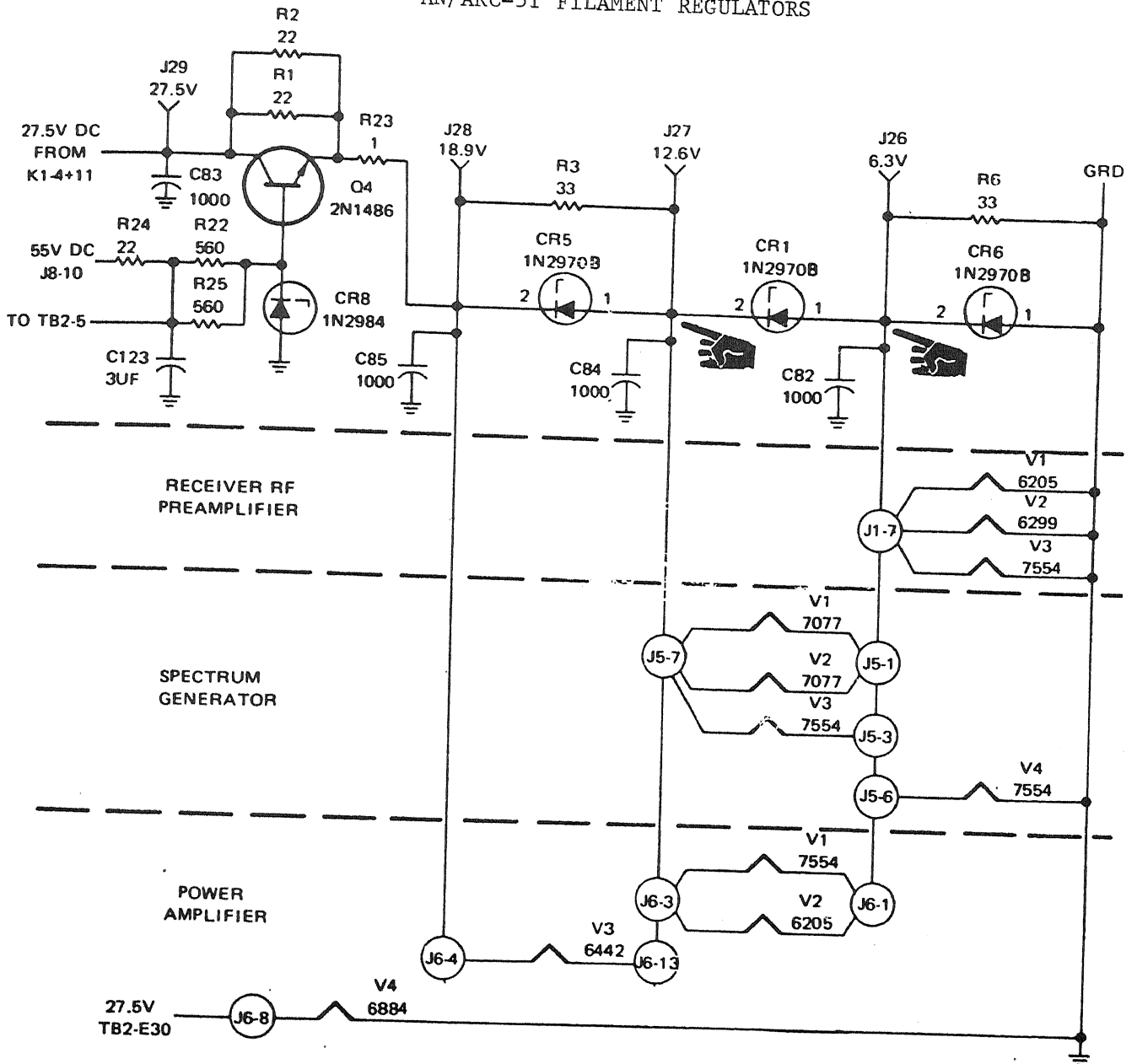
Z ₀ 150 OHMS 6KC BW	Z ₀ 150 OHMS 4KC BW	Z ₀ 800 OHMS 6KC BW	Z ₀ 800 OHMS 4KC BW
ON 1A4T2 6-8 7-9	ON 1A4T2 6-8 7-9	ON 1A4T2 6-8	ON 1A4T2 6-8
ON 1A4TB2 2-5 1-4 3-7	ON 1A4TB2 2-5 1-4 3-7 R26 (100) BETWEEN 2-4	ON 1A4TB2 2-5 6-7	ON 1A4TB2 2-5 6-7 R26 (1K) BETWEEN 1-4
1A4T2-8 TO 1A4TB2-5	1A4T2-8 TO 1A4TB2-5	1A4T2-8 TO 1A4TB2-1	1A4T2-8 TO 1A4TB2-1

- 6 DASHED LINES INDICATE CONNECTIONS FOR USE OF DYNAMIC MIKE. SOLID CONNECTIONS ARE FOR CARBON MIKE. FOR DYNAMIC MIKE CONNECTIONS MOVE WIRES FROM T1-2 TO T1-3.
- 7 CONNECT AS SHOWN BY THE DOTTED LINE FOR SILENT CHANNEL. TONE CONNECT AS SHOWN BY THE SOLID LINES FOR 400 CPS CHANNEL TONE.
- 8 1A10FL1 SYMBOL NUMBERS INCLUDE L2 THRU L30 AND L40 THRU L54 CHOKES, VALUE 39UM, L55 THRU L154 FERRITE BEADS, C5 THRU C81 AND C90 THRU C121, VALUE 400UUF.
- 9 FRONT AND BACK ROTORS ARE ELECTRICALLY CONNECTED WITH POSITIONS SHOWN, 1ST IF IS TUNED TO 25 MC.
- 10 FRONT AND BACK ROTORS ARE SEPARATE. FRONT ROTOR IS FOR TRANSMIT, BACK ROTOR IS FOR RECEIVE WITH POSITION SHOWN, 2ND IF IS TUNED TO 2.9 MC.
- 11 JUMPER TBI-5 TO TBI-6 FOR AUDIO GROUND IN CHASSIS. OPEN TBI-5 TO TBI-6 FOR FLOATING AUDIO OUTPUT LINE.
- 12 Q1 AND Q2 ARE LOCATED NEXT TO TERMINAL BOARD TB2.
- 13 \bullet FRONT TERMINAL
 \circ REAR TERMINAL
 \bullet FRONT AND REAR TERMINAL ELECTRICALLY CONNECTED
- 14 THE VALUE OF R48 IS SELECTED SO THAT NOISE LIMITING AS OBSERVED AT 1403 OCCURS BETWEEN 35 AND 65 PERCENT MODULATION. VALUE RANGE IS FROM 47K TO 120K.

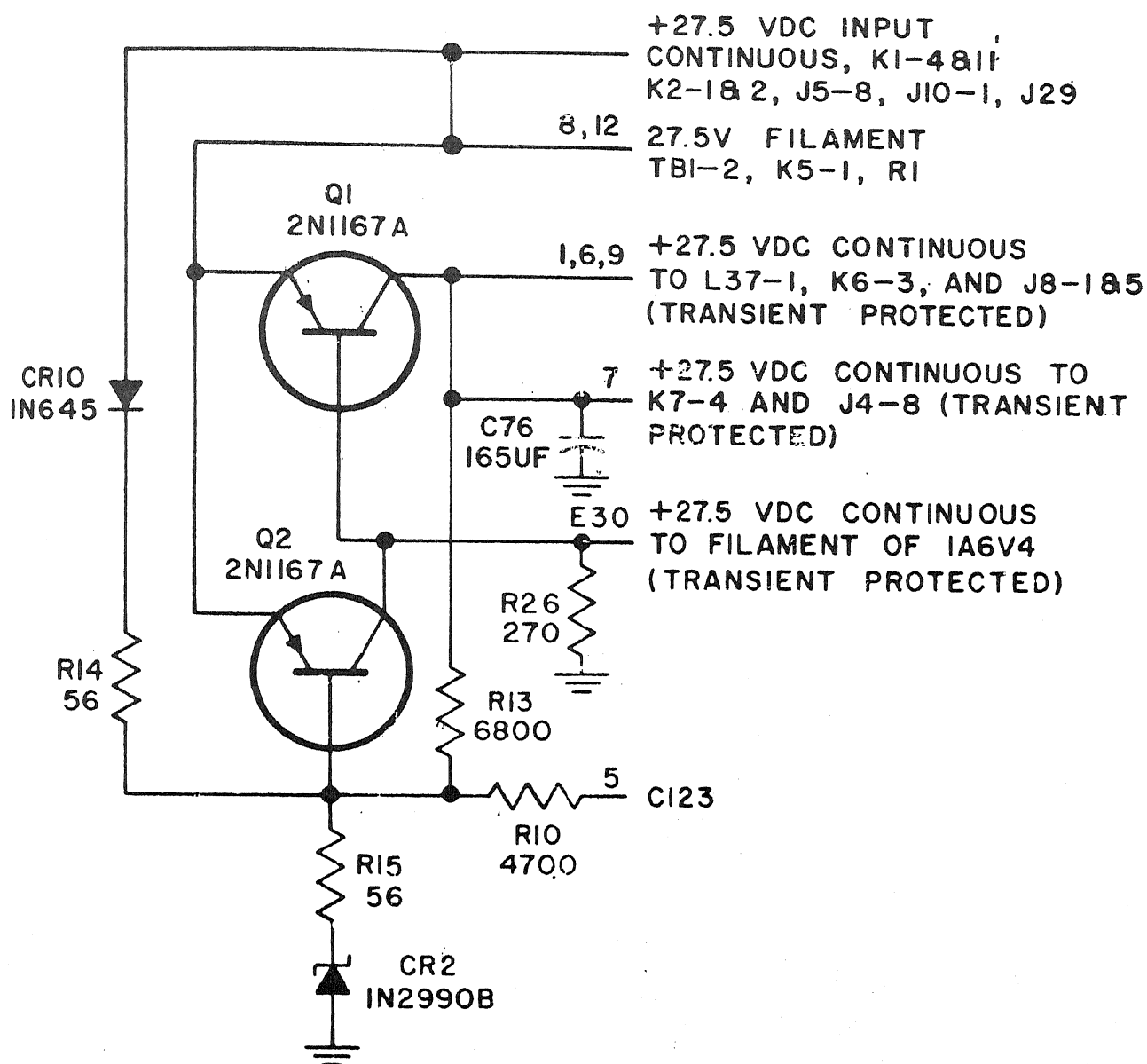


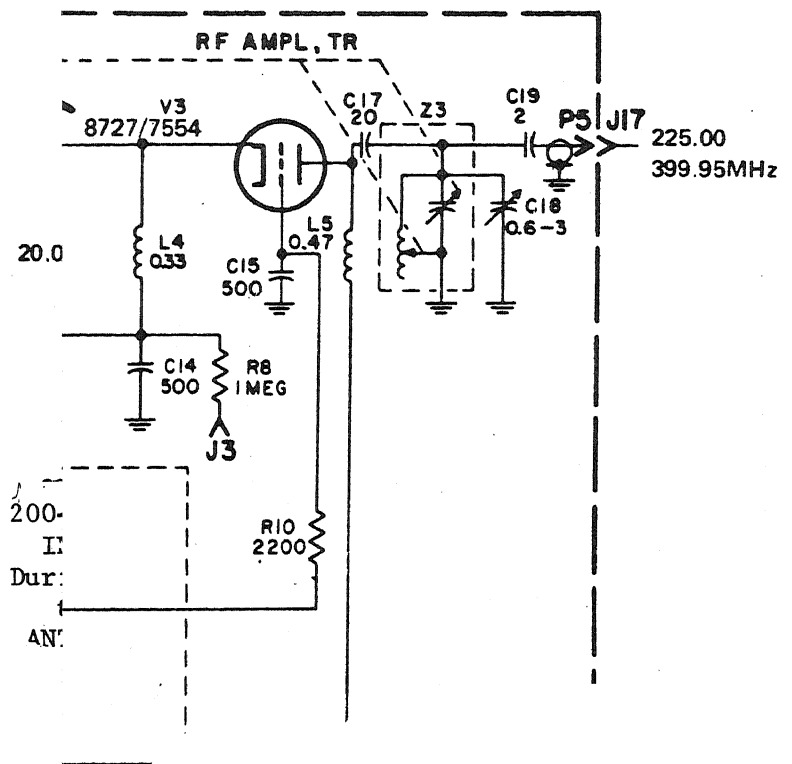
RT-743/ARC-51A, Schematic Diagram
(Sheet 2 of 2)

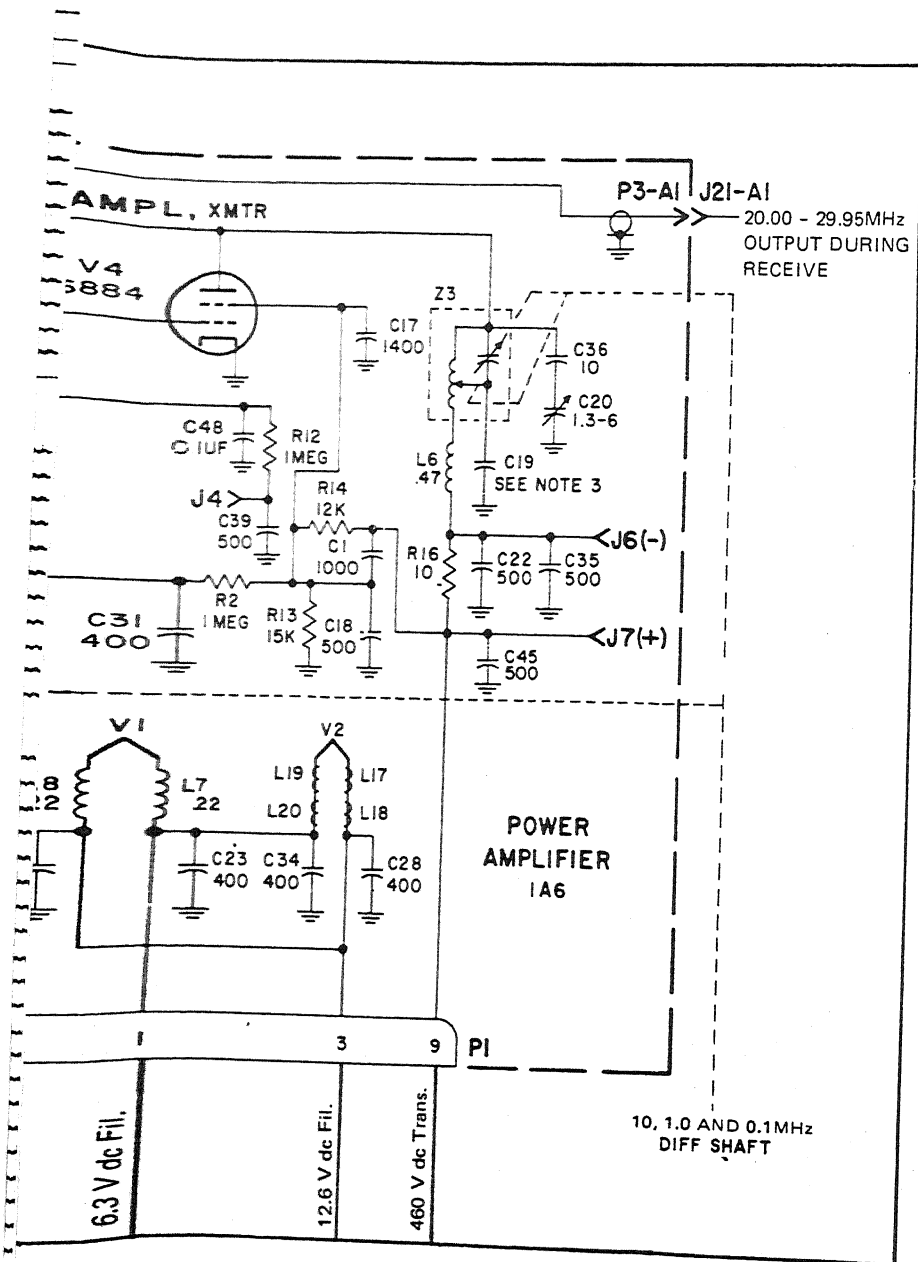
AN/ARC-51 FILAMENT REGULATORS



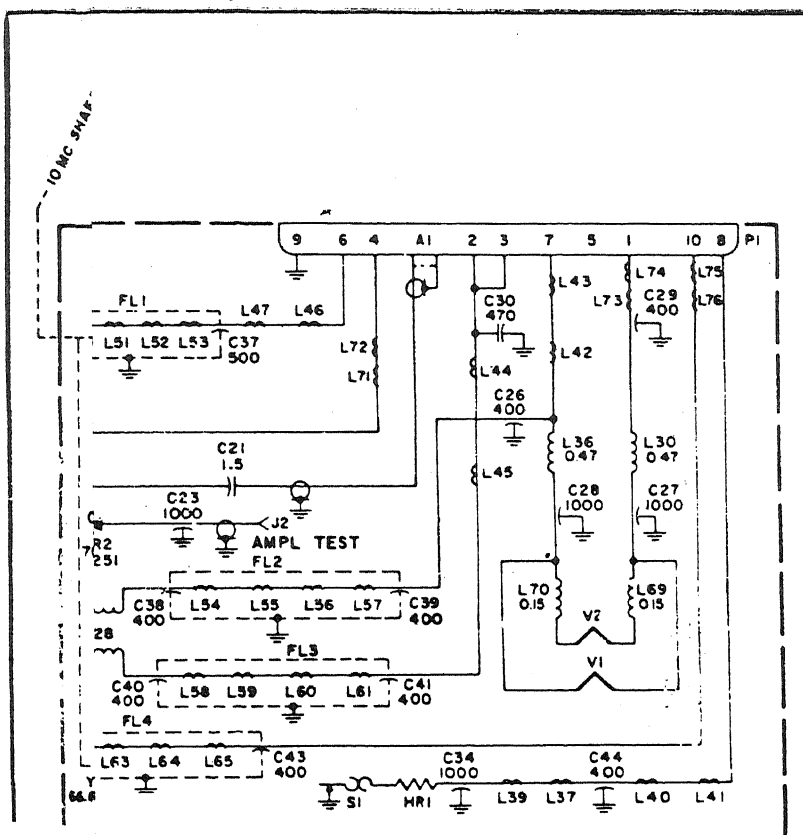
TRANSIENT PROTECTED CIRCUITRY





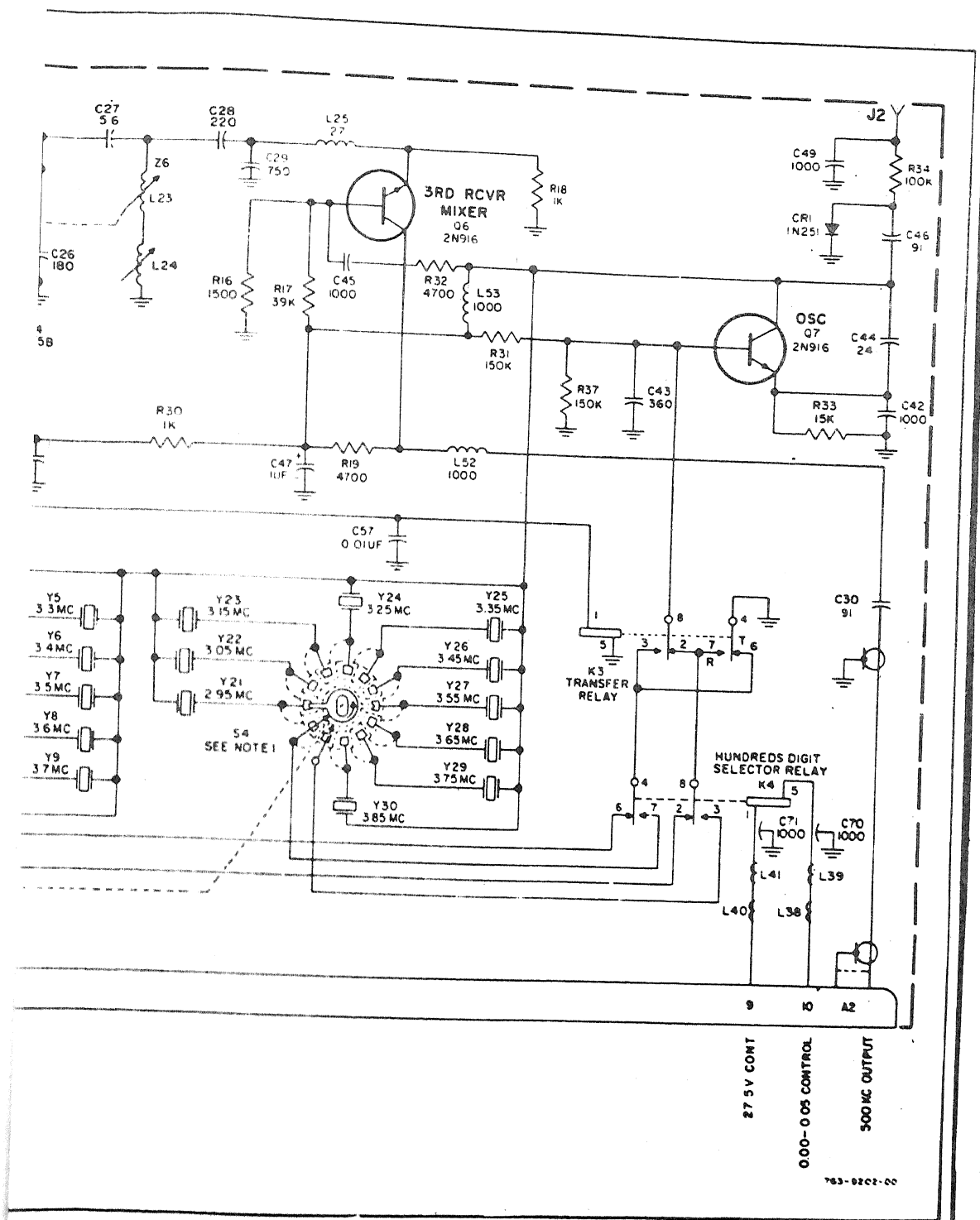


ATED, ALL RESISTANCE VALUES ARE IN OHMS,
RE IN MICROHENRYS, ALL CAPACITANCE
OFARADS.
RE CONNECTED.
UNING SHAFT (400 UUF).



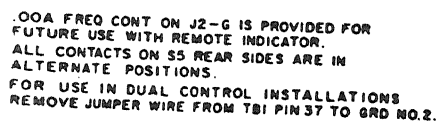
FUNCTION

200- to 370-mc output
 6.3-volt d-c filament
 18.9-volt d-c filament
 240-volt d-c continuous
 Not used
 6.3-volt d-c filament
 12.6-volt d-c filament
 27.5-volt d-c continuous
 Ground
 Not used in AN/ARC-51 or AN/ARC-51A



First and Second I-F Amplifier Module Schematic Diagram.

J2 MS 3112E-18-32P

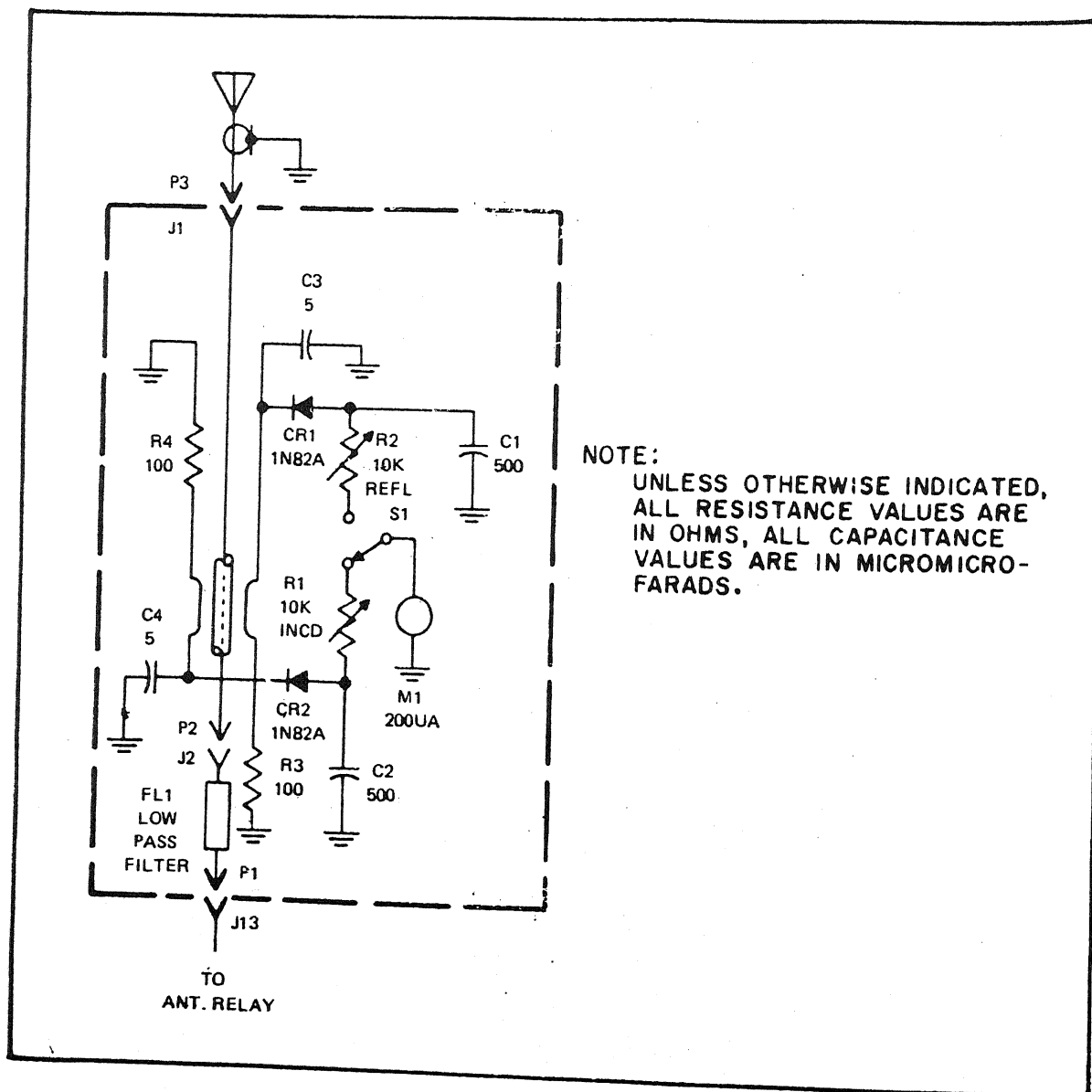


"X"-INDICATES WIRE GROUNDED ON SPECIFIC DIAL POSITIONS

10-A J2-U
10-B J2-V
10-C J2-W
10-D J2-X
10-E J2-Z
200-A J2-K
300-B J2-M

1-A J2-a
1-B J2-b
1-C J2-c
1-D J2-d
1-E J2-e

1-A 10-0



Standing Wave Ratio Indicator ID-1003/ARC, Schematic Diagram

